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Long-Term 2 RFP Stakeholder Engagement

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Agenda

1. Developing on Agricultural Land:
 - Policy Overview
 - Agricultural Land Use Planning Concepts (OMAFRA staff)
2. LT2 RFP Connection Guidance and Deliverability – Update
3. Enhanced Power Purchase Agreement – Design Update
4. Resource Eligibility:
 - Hybridized Facilities, Repowered Facilities, Distributed Energy Resources (DERs)
5. LT2 Contract Provisions
6. Next Steps

Recap: Procurements Under Development

Mechanism	Target	Resource Types	Anticipated Commitment
MT2 RFP (2025)	Energy: TBC Capacity: TBC	Existing energy and capacity resources that are uncontracted or coming to the end of their contract term	5 year contracts starting May 2027, May 2028 or May 2029
LT2 Energy (2025)	5 TWh (~2,000 MW)	Energy-producing Market Participants over 1 MW, including repowered/refurbished facilities	20 year contracts starting in 2030
LT2 Capacity (2025)	500-1,000 MW	Capacity-based Market Participants over 1 MW	20 year contracts starting in 2031
Long-Lead Time (2025)	500-1,000 MW	Energy and capacity resources with long-lead times	40 year contracts starting in 2034-2035

Recap: Future Procurements

Mechanism	Target	Resource Types	Anticipated Commitment
MT 3/4/5...	Energy: TBC Capacity: TBC	Existing energy and capacity resources that are uncontracted or coming to the end of their contract term	Flexible 5 year contracts
LT3 Energy (2027)	1,500 MW (TBC)	Energy-producing Market Participants	TBC - 20 year contracts starting in 2032
LT3 Capacity (2027)	TBC	Capacity-based Market Participants	TBC - 20 year contracts starting in 2032
LT4 Energy (2029)	1,500 MW (TBC)	Energy-producing Market Participants	TBC - 20 year contracts starting in 2034
LT4 Capacity (2029)	TBC	Capacity-based Market Participants	TBC - 20 year contracts starting in 2034

Overview of LT2 RFP Design Considerations

Closed Design Items

- E-PPA Conceptual Design
- Resource Eligibility: DERs, hybridized facilities, repowered facilities
- Municipal Support Resolutions

Open Issues – IESO Proposals

- LT2 RFP Deliverability Assessment
- LT2 Contractual Obligations
- Indigenous Community participation
- Community engagement
- Rated criteria
- LT2 RFP: Capacity stream
- LT2 RFP Proposal Evaluation
- Agricultural Land Use

Outstanding Items

- Long lead-time resources
- MT2 RFP: design and coordination with LT2 RFP



Developing on Agricultural Land: Policy Overview

Agricultural Land Use: Policy for IESO Procurements

- On June 6, 2024, the Minister of Energy (MoE) and Minister of Agriculture, Food and Rural Affairs (OMAFRA) jointly issued a letter to the IESO outlining the following policy considerations for developing energy projects in agricultural areas:
 - Rated criteria points for projects that avoid prime agricultural areas
 - No projects in specialty crop areas
 - Prohibit ground-mounted solar projects in prime agricultural areas
 - All other projects require an Agricultural Impact Assessment (AIA) to locate in prime agricultural areas
- The final details of the LT2 RFP policy are expected by Fall 2024.

Rated Criteria Points for Project Location

- “Provide rated criteria points for projects that avoid **prime agricultural areas.**”
- The IESO is evaluating the implications of this policy within the broader framework of rated criteria and will report back to stakeholders during a future engagement.
- The IESO will continue to work with government on the appropriate implementation of this policy, including evidence requirements, which could take the form of:
 - Attestation by municipality, either as part of a Municipal Support Confirmation, or as a separate document
 - Attestation by a third-party

Restrictions

- “Ensure no new projects may be built in **specialty crop areas** as defined by the municipality’s or Northern planning board’s Official Plan (e.g., Holland Marsh, Niagara Peninsula Tender Fruit and Grape Area, etc.)”
- “Build upon the requirements in the Provincial Policy Statement and prohibit ground-mounted solar projects from **prime agricultural areas** as defined by the municipality’s or Northern planning board’s Official Plan.”
- As with rated criteria points, evidence will be required with proposal submission to ensure policies are upheld.

Agricultural Impact Assessments (1)

- “Require that all other eligible resource types may only locate on lands which constitute Prime Agricultural Areas if they have received municipal council support and completed an **Agricultural Impact Assessment (AIA)** to the satisfaction of the municipality.”
- Similar to above, the IESO is considering what would constitute evidence of a satisfactorily completed AIA (e.g. an attestation by the municipality, possibly in conjunction with a Municipal Support Resolution).

Agricultural Impact Assessments (2)

- The IESO is also considering the appropriate timing for this requirement to be met, which could be:
 - With proposal submission, or
 - A pre-COD contract milestone (e.g. 18 months post contract award, similar to municipal support in LT1)
- The IESO will continue to work with government to refine these requirements.



Agricultural Land Use Planning Concepts

Ministry of Agriculture, Food and Agribusiness



LT2 RFP Preliminary Connection Guidance and Deliverability Update

Background: LT2 RFP Energy Stream Deliverability

The IESO is developing a deliverability process for the LT2 Energy Stream comprised of two steps:

1. **Preliminary Connection Guidance for the Long-Term 2 RFP– Energy Stream (ES)**

- Preliminary Connection Guidance Document issue 1.0 published on April 2024
- Updated Preliminary Connection Guidance will be discussed today

2. **Evaluation Stage Deliverability test**

- This test is currently under design
- A draft methodology is to be shared in end-July for discussion

Overview of Updates to the ES Connection Guidance

- The Preliminary Connection Guidance was updated to reflect:
 1. The successful projects as per the Long-Term 1 RFP process; and,
 2. An updated assessment of limitations associated with inverter-based resources (IBR), as per feedback provided by stakeholders

Overview: Resulting Changes to the ES Connection Guidance

- The updates to the connection guidance resulted in following key changes:
 - Slight increases to Area Congestion Limitations
 - Expanded Bright-line IBR limitations:
 - Northern Circuits: 75 MW for 115kV circuits; 200 MW for 230kV circuits
 - Southern Circuits: 75 MW for 115kV circuits; 250 MW for 230kV circuits
 - Note: expanding these limits impacts the area limitations
 - Updates to the lists of circuits with restricted capacity
- Additional minor changes included removing Owen Sound TS from the list of short-circuit limited stations, adjustments to circuit congestion limitations and list of circuits to avoid.

Map of the Transmission System

- The IESO and Hydro One continue to work towards providing a map of the transmission system which will identify station and circuit names.
- A draft web-based procedure for requesting the map has been established and will be shared with stakeholders via the [Long-Term 2 RFP \(ieso.ca\)](https://ieso.ca) webpage.
 - The procedure will be shared in approximately two weeks, following final review and testing
 - The procedure includes sending the map via email after obtaining the requester's contact information and acknowledgement of Hydro One and IESO disclaimers around its use

Pre-submission Consultation on ES Connection Guidance

- The IESO is providing an opportunity for proponents to schedule a pre-submission consultation session with the IESO on its Preliminary Connection Guidance Document.
- The instructions to schedule a meeting have been sent to those attending LT2 RFP engagements via email and have been posted on the [Long-Term RFP \(ieso.ca\)](https://ieso.ca) webpage.
- The following information is requested prior to the meeting:
 - List of Attendees
 - Preferred date and time (provide at least two options)
 - Questions you wish to ask during the consultation

All discussions must be limited to the Preliminary Connection Guidance Document

LT2 RFP ES Deliverability Next Steps

- Updated Preliminary Connection Guidance Document for LT2 RFP ES (Issue 2.0) to be posted during the week of June 17*.
- Procedure to request access to the transmission system map to be posted during the week of June 17*.
- Provide draft evaluation stage deliverability test methodology by end-July for stakeholder feedback,
- Conduct pre-submission consultations, coordinated through engagements (engagement@ieso.ca).

*target timelines

Overview: Approach to LT2 RFP Capacity Stream Deliverability

- The IESO will provide early guidance on preferred locations for LT2 projects considering LT1 RFP results and expected transmission upgrades.
 - The IESO will not execute a preliminary deliverability testing process, such as that included in the E-LT1 and LT1 RFPs.
- The deliverability process for the LT2 RFP Capacity Stream will include two steps:
 - Preliminary Guidance – targeting to provide preliminary guidance in mid-Q4 for stakeholder feedback.
 - Evaluation Stage Deliverability Test – to be designed and shared for stakeholder feedback following completion of the Preliminary Guidance.



Enhanced Power Purchase Agreement (E-PPA) – Design Update

E-PPA Overview

Background:

- The IESO presented an Alternate E-PPA design at the April 4, 2024, engagement, whereby day-ahead energy revenues can be protected for suppliers when they are required to buy-back day-ahead schedules at higher real-time prices.

Considerations:

- Stakeholders expressed support for the IESO's design and indicated the IESO should consider increasing the percentage of protected DAM settlement revenues. Some stakeholders indicated that rated criteria points should not be awarded to proponents that opt not to elect the Alternate E-PPA design and that the Alternate E-PPA design be the only design made available under the LT2 RFP.

Decision: Alternate E-PPA design enabled for LT2 RFP


- The IESO will enable the Alternate E-PPA design for the LT2 RFP.
 - The design will not be enabled for the LT3 RFP and beyond as suppliers will have a track record of pricing outcomes under the new day-ahead and real-time market.
- The majority of stakeholder feedback received after the May engagement session contained suggestions related to the proposed **60% protection threshold** for Day-Ahead to Real-Time market revenue risk, optionality of protection and the approach to rated criteria points.
 - The IESO will be incorporating this feedback to land on a final approach that will be communicated at the next session.



Resource Eligibility

Resource Eligibility Overview

- The IESO has continued to provide clarity to stakeholders on the subject of Resource Eligibility based on stakeholder feedback and evolving policy.
- Feedback received thus far has sought greater clarity from the IESO on a number of different resource types or configurations:
 - Hybridized Facilities
 - Repowered Facilities
 - Distributed Energy Resources (DERs)
- The following slides will seek to provide additional clarity to stakeholders and close off any outstanding questions on eligibility, where applicable.



Resource Eligibility – Hybridized Facilities

Recap: Hybridized Facilities

- The E-PPA provides the opportunity for hybridized facilities to take advantage of additional efficiencies from the energy only contract.
- Hybridized facilities would be efficient at mitigating Day-ahead to Real Time (DART) risk and injecting during high priced hours; attaining energy market revenues that are greater than deemed revenues.
- With the introduction of a Capacity Stream for the LT2 RFP in addition to the Energy Stream, Proponents have an additional option to deploy a hybrid facility as a capacity resource.

Hybridized Facilities

- Proponents will have two options for deploying hybrid facilities within the LT2 RFPs:

Participate in the Energy Stream

- Receive an energy contract for the energy resource and build a merchant battery behind the connection point.
- Enhanced ability to mitigate DART risk.
- Enhanced ability to inject during high priced hours.

Participate in the Energy and Capacity Stream

- Receive an energy contract for the energy resource and a capacity contract for the energy storage resource.
- Facility would be co-located and therefore both resources would be separately metered.
- Both resources would be bound by the terms of their specific contract.

Considerations

- Where participating in the Energy and Capacity Streams, the energy producing resource and the energy storage resource will have separate independent bids and will be evaluated separately.
- The capacity at the connection point must be greater than or equal to the combined capacity of the energy producing resource and the energy storage resource for both resources to be deliverable.
- In the event that energy producing resources and capacity resources are competing for the same deliverability connection availability, resources in the Energy Stream will be given priority.



Resource Eligibility – Repowered Facilities

Recap and Feedback Received

- The IESO has sought feedback from existing asset owners with expiring contracts, in particular wind resources, on repowering opportunities, as it sought to enable them in the LT2 RFP.
- Feedback thus far has been clear that a number of technical, regulatory, and permitting challenges remain that inhibit repowering/refurbishment of wind for the LT2 RFP, in particular:
 - Obtaining necessary approvals and permits;
 - Concerns with facilities that predate current regulations (e.g., REA tonality limits) would not be approved;
 - Issues related to replacing existing equipment on a like for like basis, given lack of supply of older components and sourcing concerns.

Repowering Considerations for the LT2 RFP

- The IESO will not enable repowered wind facilities under the LT2 RFP, instead in response to stakeholder feedback, the IESO has accelerated the timelines for the MT2 RFP.
- The IESO will continue to engage with the waterpower sector to consider how expansions or refurbishments of existing waterpower facilities can be accommodated under the LT2 RFP.
- Despite limited feedback thus far, the IESO remains open to feedback from other resource types on opportunities for repowering/refurbishment opportunities.

Future Considerations

Future LT RFP Considerations:

- The IESO expects that repowering can be enabled for the LT3 RFP; the IESO will continue to explore additional opportunities to address remaining barriers in subsequent procurements.

Participation in the MT2 RFP and Future LT RFPs:

- The IESO will also continue to engage with MT2 Contract counterparties to seek opportunities for participation in future LT RFPs if they are seeking to repower at a later date.

Repowering: Summary

Wind	Waterpower	Other Resources
Not eligible for LT2 RFP	Ongoing work to accommodate repowered, expanded or refurbished facilities under the LT2 RFP	The IESO is open to feedback from other asset owners on how their facility/ technology type may be considered under the LT2 RFP.



Resource Eligibility – DERs

Recap: DERs

Background:

- The IESO previously communicated that it is seeking to enable stand-alone and aggregate DERs in the Energy Stream of the LT2 RFP.
- Today, stand-alone DERs are enabled in the IESO-administered markets as embedded generators. However, aggregate DERs are not currently eligible to participate as Market Participants. Instead, constituents of potential aggregate DERs can participate in the IESO Capacity Auction as part of a virtual hourly demand response resource.

IESO Enabling Resources Program (ERP):

- The IESO is aiming to enable aggregate DERs ($\geq 1\text{MW}$, connected to a single node) as Market Participants through the ERP.

Considerations

Timing and Alignment of LT2 RFP with IESO Enabling Resources Program:

- Stakeholders have been supportive of enabling DERs in the LT2 RFP but have sought clarity on how the IESO expects to address timing misalignments between the implementation phase of the IESO's Enabling Resources Program and development of the LT2 RFP and Contract.
- Some stakeholders have expressed concern that an aggregate DER proposal could be awarded an LT2 Contract but not be able to participate as a Market Participant by the LT2 Milestone Date for Commercial Operation.

Proposal: Limit LT2 RFP eligibility for DERs

Stand-Alone DER resources:

- For the LT2 RFP, new-build stand-alone DER resources will be eligible to participate if they are: non-emitting, energy-producing, ≥ 1 MW in size and able, as of the Proposal Submission Deadline, to meet the required Market Rules to become a Market Participant.

Aggregate DER resources:

- The IESO is proposing to defer eligibility of aggregate DER proposals until the LT3 RFP. This will ensure that the enhancements driven by the ERP are live and can be effectively reflected in the LT3 Contract and in a proponent's Proposal submissions.

Proposal: Summary

Stand-Alone Distributed Energy Resources < 1 MW	Stand-Alone Distributed Energy Resources \geq 1 MW	Aggregated Distributed Energy Resources
Not eligible for LT2 RFP (i.e. does not meet current size requirements to become a Market Participant)	Eligible for LT2 RFP provided that the resource is: <ul style="list-style-type: none">• Non-emitting• Energy producing• Able to meet the necessary market rules required to become a Market Participant	Not eligible for LT2 RFP



LT2 Contract – Energy Stream: Key Provisions

Key Provisions Overview

- Based on stakeholder feedback received thus far regarding LT2 Contract provisions, the IESO will discuss the following to provide additional clarity and considerations:
 - Performance Obligations
 - Treatment of events of Force Majeure and Outages
 - Treatment of Excess Deemed Revenue
- The LT2 RFP is a reliability driven procurement that is key to meeting emerging system needs. The following provisions seek to ensure that resources are performing in a manner that aligns with that reliability consideration, while accounting for operating and system conditions.

Recap



Performance Obligations

Minimum submission thresholds for Imputed Production Factors

Non-performance charges for underperforming facilities



Force Majeure and Outages

Deeming of energy market revenues during outages and instances of force majeure



Excess Deemed Market Revenues

Payment to the IESO when deemed energy market revenues exceed the contracted Monthly Revenue Requirement

Performance Obligations: Minimum Production Factors

Background: The IESO is proposing the use of minimum thresholds for Imputed Production Factors submitted under the LT2 RFP to ensure that contracted facilities can effectively address reliability needs.

Proposal: Annual imputed production factors submitted for each facility (average of 12 monthly bid production factors) under the LT2 RFP must be greater than or equal to the proposed minimum thresholds indicated below, based on facility type.

Generation Facility Type	Minimum Threshold for Annual Imputed Production Factor
Wind	[20%]
Photovoltaic Solar	[11%]
Dispatchable Hydroelectric	[28%]
Intermittent Hydroelectric (i.e. run-of-the-river)	[30%]
Bioenergy (i.e. biomass, biogas, etc.)	[Under consideration depending on resource type]

Performance Obligations: Non-Performance Charge

Background:

- To ensure that contract resources are providing the services that they are contracted for, the IESO is considering a financial non-performance charge for suppliers that are not able to achieve a minimum proportion of their submitted Annual Imputed Production Factor during the term of the LT2 Contract.

Considerations:

- Stakeholders have indicated that the IESO should align a non-performance charge with how it is applied in other jurisdictions (i.e. 80% threshold) and provide clarity on how outages will be accounted for when evaluating the performance of a facility.

Non-Performance Charge: Revised Proposal (1)

Applicability:

- All facilities awarded a LT2 Contract will be subject to the same non-performance charge.

Performance Evaluation During Outages:

- The IESO will consider all outages, other than instances of force majeure, when evaluating the performance of a facility. Suppliers are expected to account for planned and forced outages in the Imputed Production Factors submitted at the time of proposal.

Non-Performance Charge: Revised Proposal (2)

- The IESO is proposing to apply a non-performance charge to a facility in each year that is not able to achieve 80% or more of their annual imputed production factor (as calculated using the previous 3-year rolling period) by using the equation below.
- Actual performance (over the previous 3-year rolling period) that results in a value lower than 65% of the facility's Annual Imputed Production factor will constitute a Supplier Event of Default.

$$\text{Non-Performance Charge} = \text{Proposal Price} * \text{Production shortfall}$$

where:

- **Proposal Price**
 - The current indexed Proposal Price for the facility as stipulated by the LT2 Contract
- **Production Shortfall**
 - The difference between 80% of the contracted production from a facility and the actual production that occurred over the rolling three-year period
 - = $[(0.8 * \text{Annual Imputed Production Factor}) - \text{Actual Production Factor}_{r,3\text{-yr rolling period}}] * \text{Installed Capacity} * \text{Hrs}$

Non-Performance Charge: Example

LT2 Contract Data

Proposal Price = \$100/MWh

Installed Capacity = 25 MW

Annual Imputed Production Factor = 20%

Actual Production of Facility

Actual Production Factor = 15%
over 3-year period

Step 1) Is the Facility subject to a non-performance charge?

Yes, the facility's actual production is < 80% of the contracted Annual Imputed Production factor

- % of Actual Production Relative to Annual Imputed Production Factor = $0.15 / 0.2 = 75\%$

Step 2) Calculate the Non-Performance Charge

Non-Performance Charge = Proposal Price * Production Shortfall

= Proposal Price * (0.8*Annual Imputed Production Factor – Actual Production Factor) * Installed Capacity * Hrs

= \$100 * ((0.8*0.2)-0.15) * 25 MW * 8760 = **\$219,000**

Force Majeure and Outages (1)

Planned, Forced, Transmission/Distribution Outages and Curtailment:

- The IESO will continue to deem energy market revenues during all outages (with the exception of force majeure).
- The IESO will continue to deem energy market revenues during curtailment, supplier energy market revenues will be made-whole under the IESO's renewed energy market (i.e. Supplier will get paid based on their day-ahead schedule and price).

Force Majeure and Outages (2)

Instances of Force Majeure:

- Similar to the LT1 Contract, suppliers will be required to provide notice to the IESO of a force majeure event and the IESO must accept the force majeure claim for it to be deemed valid.
- The facility will not be deemed for energy market revenues for the duration of an accepted Force Majeure event.
- The calculation of the Grid Reliability Payment will be proportionally reduced by the extent of the Force Majeure hours in the month and the calculated 3-year production factor minimum will exclude Force Majeure hours.

Excess Deemed Market Revenues (1)

Background:

- The IESO has proposed that 100% of the monthly Deemed Energy Market Revenue **in excess** of the Monthly Revenue Requirement will flow back to the IESO (i.e. when the Grid Reliability Payment is negative in any given month due to factors such as high LMPs).

Considerations:

- Stakeholders have expressed that pay back of deemed market revenues can disincentivize projects from being sited in areas with nodal prices that are indicative of a need for more generation. Suppliers have also indicated that the proposed pay back can be punitive to suppliers when coupled with a non-protected E-PPA design.

Excess Deemed Market Revenues (2)

Proposal Update:

- The IESO is proposing to continue with its requirement to have suppliers pay back monthly deemed revenues that exceed their monthly revenue requirement, given that recent modifications to the E-PPA design have sought to better manage risks for suppliers (i.e. protection of DA to RT settlement risk and use of Forecast Weighted Average Price for wind and solar as the imputed production price).
- The IESO is open to stakeholder feedback on the percentage of the negative Grid Reliability Payment that is to be paid back and will present a final decision in upcoming engagements.



Next Steps

Upcoming Engagements

- The IESO is planning a series of engagements over the next few months.

Today

- June 7 Ministerial Letter
- Agricultural Impact Assessments
- LT2 Deliverability Update
- E-PPA Update
- Hybridization
- Repowering
- DERs
- LT2 Contract Provisions

July 4

- MT2 RFP
- LT2 Capacity Stream
- LT2 RFP Proposal Evaluation

July 24

- Community Engagement
- Indigenous Participation
- Rated Criteria

Next Steps

- The IESO invites written feedback by **June 27**. All written feedback should be submitted to engagement@ieso.ca utilizing the provided IESO Feedback Form.

Thank You

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